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## RÉSUMÉ OF CRITICISMS OF THE U.S.P.

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To the pharmacist who is willing to assist in the progress of American pharmacy the recently published, and now official, eighth decennial revision of the Pharmacopœia of the United States of America must, even now, be second in interest and importance to the prospective ninth decennial revision that will be published by a committee on revision to be appointed at the National Convention for Revising the Pharmacopœia, to be held in the city of Washington, in May, 1910.

To make this prospective Pharmacopœia even more representative of the ideas, ideals and practices that dominate the practice of pharmacy in this country at the time, should be the ambition of every active member of the profession for whom the Pharmacopœia is more directly intended as a text-book and guide.

To do this, and to do it at all satisfactorily, it will be necessary that every page, every monograph, and even every line of text in the present Pharmacopœia be subjected to a critical examination with a view of finding errors or discrepancies in the theories and supposed facts therein presented.

To direct, and if possible aid in, the observation and study of these possible shortcomings, it is proposed to publish from time to time, as material and space permit, extracts from criticisms of the Pharmacopœia and pharmacopœial matter published elsewhere.

While commendatory notices of a book of the nature of a pharmacopœia must necessarily be justly numerous, and in many respects interesting, they have little or no use in fostering a spirit of critical

inquiry, and they will, therefore, but seldom find reflection in these pages unless they have a direct bearing on some subject immediately under discussion. It should be borne in mind also that the criticisms that will be presented do not necessarily bear the endorsement of the compiler, the editor of the JOURNAL, or of any member of the Publication Committee, and that they are presented here merely as "food for thought, suggestions for observation, and material for research and study."

### PRESENT METHOD OF REVISING THE PHARMACOPŒIA UNSATISFACTORY.

That the present method of revision cannot give satisfaction is apparent, most of all to those entrusted with the task. Work done mostly by correspondence, often by members a thousand miles apart, has its insurmountable difficulties in spite of rapid mail service, telegraph and telephone.

What is needed is a central research laboratory to which the subcommittees may be delegated for certain periods, with a proper succession prearranged; such a laboratory need not be large, but should be supplied with everything necessary for research, especially a good working library. Work that has required several years, with its almost inevitable misunderstanding at the very end, might be done in almost as many months.

Another need is greater publicity in order that the bulk of criticism may be brought out before the book is published rather than after. (E. K., in *Pharmaceutical Review*, 1905, page 261.)

### THE USE OF THE PHARMACOPŒIA.

The fact that the Pharmacopœia is a legal guide in so many States makes its neglect rather a serious matter for a great many druggists, and none knows in advance just how the serious aspect of such neglect is likely to first appear.

Though the Pharmacopœia has for many years been for the pharmacist the most important book that he could own, it has, unfortunately, turned out to be the one book that multitudes of them have thought they could best get along without. True, they have had it served up to them in divided doses by the various commentaries, but as a working manual the original book is far superior to the larger commentaries upon it, both as to its size—being much less bulky—and in the clearer presentation of the formulas in bold type

and with a freedom from mingling of lines which renders some of the subsidiary works unsuitable for the busy laboratory worker. It may also be said that as judges and attorneys come to know more about the pharmacopœia and its functions, decisions will be rendered upon what it says and not upon what the dispensatories say that it says. We can unhesitatingly recommend the new book to all readers of the *Circular* as being a work which it is of supreme importance to them that they possess if they really desire to conduct their business in a manner befitting modern times. It is a product that every pharmacist can be proud of, since it not only will compare favorably with every other pharmacopœiæ in the world, but an unbiased judgment of its merits will compel the decision that it leads all others. (*The Drug. Circ.*, 1905, p. 263.)

### THE USE OF THE PHARMACOPŒIA BY PHYSICIANS.

It has been a standing reproval to the medical profession in general that they have taken little interest in this important work, but fortunately this is fast becoming a matter of history, and the time, we hope, may not be far distant when the Pharmacopœia will be a living part of every practitioner's armamentarium. The flagrant features of the patent medicine evil, so far as it is fostered by the physician himself, will cease to exist when he is better acquainted with this book. (*Medical News*, August 19, 1905, p. 360.)

### THE LATIN OF THE U.S.P.

The new Latin of the U. S. Pharmacopœia is necessarily one of the first features to strike the reader. There are many eminent philologists in America, and the Pharmacopœia revisers have probably had the advice of some of these, so that it will not be safe to be too keenly critical, but "fluidextractum" can hardly be Augustan. We may expect "Unitedstatesum" next. A single word to represent the class of galenicals is perhaps a desideratum, but the nation which has invented "vaseline," "tabloid" and "liquozone" need not have been floored by such a simple problem.

"Emulsum" for "emulsio" may or may not be quite new just now; it is at all events a regrettable change. "Emulsio" was a medical Latin substantive, coined in orthodox fashion from the verb

*emulgere*, to milk out, past participle *emulsus*. It was first used to describe the milk of almonds, milked out from the blanched almonds. In what respect "*emulsio*" is not satisfactory does not appear.

With antipyrine recognized it is not easy to see why sulphonal and trional should not have been Latinized more simply than under the pedantic barbarisms of "sulphonmethanum" and "sulphonethylmethanum. "Manganum" is better than "manganesium," especially because it more clearly distinguishes the element from magnesium; but the abbreviation of ipecacuanha to "ipecac," common and convenient as it is in commerce and conversation, ought not to be encouraged in a book of authority for historic reasons. (Xrayser, in *Chem. and Drug.*, 1905, p. 89.)

OBJECTIONS TO WEIGHTS AND MEASURES.

As in the last revision the metric system of weights and measures is used exclusively, except where doses are concerned, and while this is all right from a scientific point of view, the universal adoption of the metric system in this country is still a long way off, and the instructions of the convention tend to limit the usefulness of the Pharmacopœia. We predict that the next revision will include alternative weights and measures, which the pharmacists have for some years been demanding. In the preface are given approximate measures which should be used to designate doses of liquid medicines. A teaspoonful is equivalent to 4 c.c. or 1 fluid drachm, a dessertspoonful to 8 c.c. or 2 fluid drachms, and a tablespoonful to 16 c.c. or 4 fluid drachms. The almost universal practice to-day is to make 5 c.c. the equivalent of one teaspoonful. (*Drug Topics*, 1905, page 229.)

USE OF METRIC SYSTEM COMMENDED.

Opposition to the metric system still exists, and its use is felt by many to entail a great deal of vexation; but the consensus of opinion among scientific men the world over is overwhelmingly in its favor, and while its general use may be delayed until the present generation of physicians and druggists shall pass away, it is sure to prevail in the end. Let us help along the good work if we can, or at least let us not hinder it. (Dr. John M. Francis, in *Bulletin of Pharmacy*, 1905, page 275.)

APPROXIMATE MEASURES OBJECTED TO.

A point of doubtful propriety is the sanctioning of the use of the teaspoonful, dessertspoonful and tablespoonful as 1, 2 and 4 fluid drachms and 4 c.c., 8 c.c. and 16 c.c. respectively. Though commonly used, the remarkable inequality in the size of these containers is too well known to require further comment. (*Am. Med.*, Aug. 19, 1905, page 295.)

POSSIBLE DANGER IN ASSAY PROCESSES.

The assaying of oil of rosemary for the percentage of borneol may be an exceedingly simple task for some pharmacists, but we doubt if many of them are able to manage reflux condensers, acetilization flasks, etc., or would know how to determine whether the first fractional distillate were dextro- or levo-gyrate. Evidently, the average druggist cannot follow such assay processes for essential oils, nor, if he could, would such ability be of much use to him. He does not make his own essential oils and seldom buys them in large enough quantities to make the assays, except under legal compulsion, profitable. However, it may be possible that the fact that such processes are given in the Pharmacopœia will make dairy and food chemists think that druggists ought to know all about them and ought to test their essential oils in the way indicated. On discovering that such is not the case, it is conceivable that some of them may make this an excuse for trying to force the care of drugs out of the hands of boards of pharmacy and into those of food commissioners. This is but a conjecture, it is true, but the ancient rights and privileges of druggists are being crowded upon so hard of late that we should guard them at all possible points of attack. On the other hand, it might be said that if the druggist did not take the initiative in establishing standards and tests, they would be regarded as derelict to their duty, and agricultural departments would have another excuse for further encroach upon their grounds. (*The Drug. Circ.*, 1905, p. 263.)

ASSAY PROCESSES COMMENDED.

The most striking innovation in the new Pharmacopœia is the increased number of assays demanded; assays not only of crude drugs, fluid extracts and tinctures, but also of essential oils. It has long een a source of astonishment that these were not demanded before,

for it is only by means of them that uniformity of strength in pharmaceuticals can be obtained. Heretofore there has been no reason why a fluid extract of jaborandi, for example, of one manufacture, should not contain four or six times as much pilocarpine as that of another. Again, it is only by determining the amount of menthol or santalol present in oil of peppermint and oil of sandalwood that the purity of such oils can be established, because the methods of adulteration and sophistication are to-day so refined that oil of peppermint, for example, can be dementholized and still meet practically all of the physical requirements of a pure oil. The methods of assay are so simple that they can be carried out without any difficulty by any retail druggist who has had the chemical training which most colleges of pharmacy claim to give. It is lamentable that the retail druggist does not make more use of his pharmaceutical chemical training than he does. Incidentally it may be remarked that the assays of the new Pharmacopœia should find a place for treatment in the curriculum of every college of pharmacy, and familiarity with them should be demanded of all candidates by boards of pharmacy. What moral right has a man to dispense preparations whose strength he is unable to determine? (Charles E. Caspari, in *Meyer Brothers' Druggist*, 1905, p. 248.)

ASSAY OF ACONITE SAID TO BE FAULTY.

Aconite is one of the instances where the Committee on Revision has carried the instructions to include assay processes, where possible, to an extreme. In the first place, we doubt whether aconite root is obtainable commercially that will yield 0·5 per cent. of aconitine melting at 195° C. The highest average yield of total alkaloid is 1 per cent., reported by Keller from dry German root, but his results have not been confirmed by other investigators. An average yield of total alkaloid from good commercial root is 0·5 per cent., and quite a percentage of this is certainly not aconitine. Moreover, the official process of assay will not extract aconitine alone; other alkaloidal substances will contaminate the final residue. If the committee had fixed the strength at 0·5 per cent. of total alkaloids, little criticism would have been aroused. In any event much more research is needed before a satisfactory assay of aconite is possible. No assay is worth anything that does not determine the aconitine. (*Drug Topics*, 1905, page 210.)

### DISCREPANCY IN DOSE OF PREPARATIONS OF ACONITE.

The standard adopted for aconite root appears surprisingly high, and when the dose of aconitine and the dose of the fluid extract of aconite are compared, the surprise is not lessened. The "average" dose of the alkaloid is $\frac{1}{400}$ grain, and that of the fluid extract is 1 minim, equal to $\frac{1}{300}$ grain, which apparently is too high; in fact, according to notions of dosage in this country for aconite, is excessive. The tincture is still further out, the "average dose," 10 minims, being equal to $\frac{1}{266}$ of a grain of aconitine. (Thos. Maben, "Standardization in the New U.S.P.," *Pharm. Jour.*, 1905, page 140.)

### ASSAYED ESSENTIAL OILS.

After September 1st, it will be advisable for druggists when selling essential oils to ask whether the oil is required for medicinal purposes, in view of the fact that, whenever possible, essential oils are required to reach a certain standard, and a process of assay is appended. Time alone will show whether the committee has acted wisely in fixing such rigid requirements for this class of products. Certain it is that sooner or later some hypercritical health official or dairy commissioner will conduct a campaign similar to that waged in this city a short time ago on the acetophenetedin subject. In any event it would seem a little premature for methods of assay to be placed in the Pharmacopœia which can only be carried out by skilled analysts, and which are of so recent date that few pharmacists in retail business have ever heard of them, least of all tried them practically. (*Drug Topics*, 1905, page 215.)

### MONOGRAPHS ON ESSENTIAL OILS COMMENDED.

Viewed all round, there can be no question that the monographs are in themselves models of what such monographs intended for guidance in medicine should be, and, in our opinion, they go very decidedly further, and are likely to be of great value to all manufacturing pharmacists, and also to those who may handle essential oils, and record the principal features in a concise form for judging purity and value. (J. C. Umney and C. T. Bennett, "The Essential Oils of the U.S.P," *Pharm. Jour.*, 1905, page 144.)

LISTS OF PREPARATIONS MISSED.

A change that will be noted especially by physicians and students, but also by pharmacists, is the omission of the lists of preparations of the various drugs. In a sense these are relatively unimportant, but we believe the majority of the physicians would vote for their restoration. (*Am. Med.*, August 19, 1905, page 295.)

A USELESS PREPARATION OF STAPHISAGRIA.

There is a notable exception to the excellence of the pharmacy of the book in the case of staphisagria. Though that drug is now rarely employed internally, to the best of our information, the only preparation of it authorized is a fluid extract, the average dose of which is given as 1 minim. We venture to say that staphisagria will continue to be used chiefly as a parasiticide, and that the fluid extract will not be found an eligible preparation for that purpose. (*New York Med. Jour.*, August 5, 1905, page 286.)

OBJECTIONS TO SOME OF THE NEW ADDITIONS.

*Acid Camphoric.*—Presumably introduced out of deference to German opinion, as it is not very extensively used here.

*Acid Trichloracetic.*—Much used as a test reagent for albumen and as a topical application, but there does not seem to be any special reason for including it in the Pharmacopœia.

*Æthyl Carbamate.*—More familiar under the name of Urethane. Its inclusion comes as a surprise, for it is rapidly falling into disuse.

*Cataplasma Kaolina.*—The modern substitute for the old-fashioned flaxseed poultice. Its introduction comes as a surprise, as the use of these clay poultices has occasioned much criticism, and is by some considered as a distinct retrograde step in modern therapeutics. The commercial kaolin, which constitutes the basis of this compound, makes a nasty, dirty-looking mass, and the official product might have had more glycerin added with advantage. It is too stiff.

*Ceratum Resinæ Comp.*—A resurrection of the old Deshler's salve, official in the 1870 Pharmacopœia, which might have been allowed to rest in peace. It is hardly a fit representative of twentieth century pharmacy.

*Chloralformamidum*—The chemical term for chloralamide. More

prescribed on the continent of Europe than in the United States, where its use is decreasing. The dose is placed at 15 grains.

*Cresol.*—Described as a mixture of the three isomeric cresols, free from phenol, hydrocarbons and water. Difficult to obtain of good quality in this market.

*Elixirs.*—The new Elixir Adjuvans is simply a mixture of fluid extract of licorice and aromatic elixir, and makes a fairly palatable liquid, but we should have preferred to see the old N. F. Elixir Adjuvans introduced without change, as the latter served admirably the purpose for which it was designed. The other newcomer is the popular elixir of iron, quinine and strychnine phosphates, but the official instructions for manufacturing the preparation are unnecessarily complicated.

*Fluidextracta.*—The new name for the old extracta fluida, and one which will not appeal to purists in nomenclature.

*Guaiacolis Carbonas.*—Another tribute to the ingenuity of German chemists. Largely prescribed, but in reality a much overrated compound therapeutically.

*Hydrastina.*—The white alkaloid of hydrastis, melting at 131° C. Supposed to represent the activity of the drug, but has not been found as useful.

*Iodol.*—A surprising addition. Was never popular, and has long since been discarded by surgeons in favor of other iodine compounds.

*Liquor Antisepticus.*—The Pharmacopœia equivalent of the popular "Listerine," which, however, it does not resemble very closely. It does not seem to us that the Pharmacopœia is just the place for imitations of what are really toilet and not medicinal articles.

*Pelletierinæ Tannas.*—Rather a surprising addition, in view of the fact that little is known of its true composition, and also that about its only use is for the expulsion of tapeworm.

*Vanillinum* is rather a strange addition, as it has no medicinal use and does not enter into any pharmacopœial product. Both the natural and artificial products are recognized, and a test is given to ensure absence of acetanilide, a frequent adulterant.

*Vinum Cocæ.*—This is the only new wine, and for this thanks to the enterprise of Mariani & Co. It is prepared from fluid extract of coca, and therefore contains cocaine, which is claimed not to exist in the advertised article. Alcohol, sugar and

red wine make up the balance of the mixture. The addition of sugar is not only unnecessary, but objectionable, and the introduction of the product cannot be commended either on pharmaceutical, medical or ethical grounds. (Extracts from *Drug Topics*, 1905, pages 195–199.)

### OPINIONS ON THE USE OF ACETONE IN MAKING OLEORESINS.

In the preparation of most official oleoresins acetone now replaces ether. It is peculiar in that it combines in itself the solvent powers of both alcohol and sulphuric ether, so that it extracts from many drugs substances soluble in ether and insoluble (to a greater or less degree) in alcohol, and also substances soluble in alcohol but insoluble in ether. As a result, most and perhaps all of the official oleoresins will, on standing, separate into a heavy portion corresponding in a measure to an alcoholic extract insoluble in ether, and a lighter portion insoluble in alcohol, soluble in ether, and corresponding in quality and quantity to the usual ether-extracted oleoresin. (Dr. John M. Francis, in *Bull. of Pharm.*, 1905, page 317.)

Acetone is used as the solvent for making all of the oleoresins with the exception of cubeb oleoresin, which is prepared with alcohol. Manufacturers have long since seen the folly of using an expensive solvent like ether, and the adoption of acetone as a solvent is a recognition of commercial pharmaceutical advances. (*Drug Topics*, 1905, page 214.)

### SPECIFICATIONS FOR ALOIN TOO RIGID.

We feel obliged to take exception to the specifications for Curacao aloin, viz.: "Soluble in about 65 parts of water, 10·75 parts of alcohol, 664 parts of ether, . . . and 21 parts of acetone;" a melting-point, after having been dried over sulphuric acid, of "about 147° C.;" "when ignited, is consumed without leaving a residue."

The above, which seems to be taken from Hager, or some similar authority, must be based upon an almost chemically pure article; it most certainly is not based upon such aloin as is generally used, and of which tons are sold annually in the United States. We find that the standard grades of commercial aloin have a melting-point of 130° to 142° C., and that on incineration they leave ash in amounts from 0·10 to 0·40 per cent. Furthermore, their solubility in water

and in alcohol does not even approximate the figures given. The specifications given in the "Pharmacopedia" of White and Humphrey are much nearer the truth: "They (crystals of aloin) are sparingly soluble in cold water (1 in 400), more soluble in 90 per cent. alcohol (1 in 18), freely soluble in hot water or (hot) alcohol, but nearly insoluble in ether." Of course, as the term aloin is not officially restricted to Curacao aloin, the pharmacopœial restrictions for this particular variety are practically non-operative for aloin as a class, and therefore of no practical value, but we regard their inclusion at all as questionable, because they are supposed to have some practical bearing on official aloins and are liable to cause confusion. (Dr. J. M. Francis, in *Bull. of Phar.*, 1905, page 319.)

TESTS FOR AMYL NITRITE UNSATISFACTORY.

A considerable proportion of the amyl nitrite on the market is of an inferior grade, and some of it, from reputable manufacturers, is not only worthless, but absolutely a source of danger because of its lack of genuine amyl nitrite. The specifications of the new Pharmacopœia are quite elaborate, much more so than in any other authority, but unfortunately they will admit a very poor, in fact almost a spurious, article. The assay by measurement of nitrogen produced is not sufficient, as we have in our possession samples which meet the assay requirements, but which, on fractionation, prove to contain very little amyl nitrite. The specification that "it boils at about 96° to 99° C." will not suffice if this means that, in common acceptance, it begins to boil at this temperature. If this statement is construed to mean that the liquid shall practically all distil at between 96° and 99° C., it becomes a greater measure of safety; though this is not sufficient to distinguish genuine amyl nitrite, and even if it were, it is too stringent. The safe and reasonable plan is to demand that the liquid shall assay at least 80 per cent. by the process given, and, at the same time, 80 per cent. or more of the total volume shall distil over between 90° and 100° C. Neither test is sufficient in itself, but together, in conjunction with the tests for free acid, water and aldehyde, will insure a high-grade commercial article. Pharmacists will, of course, remember that amyl nitrite decomposes readily on exposure, and will hence keep their stock at a minimum. (Dr. J. M. Francis, in *Bull. of Phar.*, 1905, page 319.)

GUTZEIT TEST FOR ARSENIC ENDORSED.

The greatest improvement is the fixing of a limit of impurity for arsenic and heavy metals. The maximum amount allowable is 1 in 100,000, a limit which makers should have no trouble in reaching. Hence the introduction of special tests for this purpose. The old Bettendorf test for arsenic, which answered fairly well, has been discarded in favor of the modified Gutzeit test, which is easier to apply and gives more consistent indications. (*Drug Topics*, 1905, page 230.)

TEST FOR ARSENIC TOO DELICATE.

The modified Gutzeit's test for arsenic is in many cases entirely too rigid. In the first place, it is difficult to obtain reagents which, by this test, will not show the presence of arsenic, and, in the second place, many official chemicals should be permitted to contain more arsenic than is represented by the proportion 1 to 100,000, which is the least permissible quantity of arsenic allowed by the new Pharmacopœia. (Chas. E. Caspari, *Meyer Bros'. Drug.*)

DETERMINATION OF CHLORIDES IN BROMIDES DIFFICULT.

Attention should also be called to the extremely unsatisfactory method retained in the new Pharmacopœia for determining the percentage of chlorides in bromides. By the present official method only the most careful and experienced analytical chemist can hope to obtain accurate results, and even he will frequently make an error amounting to 25 per cent. of the actual amount of chloride present. If the chloride must be titrated with the bromide by means of a silver solution, then it is much more accurate to add an excess of the silver nitrate and determine the excess by means of a standard sulphocyanide solution, because the end point in this case is much more easily recognized than when potassium chromate is used as an indicator. By far the best method of making the determination consists in treating the mixture of chloride and bromide in acid solution with some oxidizing agent, such as ammonium persulphate or lead peroxide, which will oxidize the hydrobromic acid, but which will not affect the hydrochloric acid, which, after the removal of all bromine, can be titrated with silver solution. The latter method can be carried out just as expeditiously as the present

official method, with very much less chance of error, and it requires only about a half-hour for the entire determination. (Charles E. Caspari, in *Meyer Bros'. Drug.*, 1905, page 249.)

DIRECTIONS FOR DETERMINING MELTING-POINT ARE MISSED.

Among the things not found in the U.S.P. are directions for determining the melting-point of various substances. This determination of the melting-point is, in the majority of cases, such a satisfactory evidence of the identity and purity of a chemical that all other tests may frequently be omitted.

The German Pharmacopœia devotes considerable amount of space to a description of how the melting-point is to be determined, and further defines the melting-point as that degree of heat at which the opaque substance melts down to transparent drops. (Otto Herting, in *D. A. Apoth. Zeitg.*, 1905, page 71.)

MELTING-POINT FOR STEARIC ACID SHOULD BE HIGHER.

The commercial stearic acid is practically the only kind that is of interest to the pharmacist, and the Pharmacopœia specifies a melting-point of not lower than 56° C. According to Brannt ("Animal and Vegetable Fats and Oils," Vol. I, page 148) this melting-point corresponds to a mixture of 60 per cent. palmitic acid and 40 per cent. stearic acid, the former being, from the source and process of manufacture, the substance that is naturally present in addition to the stearic acid. A very large proportion of the commercial article has a lower melting-point than 56° C., and it should be remembered that a difference of 2° or 3° produces a marked effect upon the consistence of glycerin suppositories; where an acid of 54° C. melting-pointing is used, the resulting base is too soft, and does not hold glycerin well at ordinary temperatures. It will repay the slightly increased cost to specify "stearic acid extra," having a melting-point of 58° C. (Dr. J. M. Francis, in *Bull. of Phar.*, 1905, page 317.)

## ABSTRACTS FROM THESES ON CHEMICAL SUBJECTS.[1]

By J. W. Ehman.

In the examination of six samples of official *Magnesium Carbonate* G. S. DuBois obtained the following data: Loss on ignition ranging from 38·45 per cent. to 45·2 per cent., the average being 41·77 per cent. Carbon dioxide ranging from 33·7 per cent. to 37·2 per cent., the average being 35·89 per cent.

The sample giving the smallest percentage of residue and carbon dioxide was most nearly free from impurities, showing only a faint trace of iron.

W. S. Thompson experimented with the cold process for the preparation of *Solution of Lead Subacetate*, which he states is used by many pharmacists. The process consists simply in macerating lead oxide in a solution of lead acetate during a period of two weeks or more and decanting the clear solution.

The best result obtained was a preparation assaying only 20·712 per cent. lead acetate after macerating but twenty-four hours. Other samples macerated a much longer time gave still lower results.

S. E. Thorley compares the quality of *Ammonia Water* obtained from drug stores with that obtained from groceries and department stores.

Two drug-store samples assayed 7·534 per cent. and 9·287 per cent. of ammonia gas.

Three samples from department stores assayed 3·236 per cent., 6·572 per cent. and 12·8 per cent. ammonia gas.

Three samples from groceries assayed 1·837 per cent., 2·025 per cent. and 8·399 per cent. ammonia gas.

The department-store sample assaying 12·8 per cent. ammonia gas was found to be the only one containing more than traces of impurities, such as solid residue on evaporation and carbonate.

Of nine sample of *Sodium Phosphate* examined by C. C. Shomo:

One gave test for iron.

Five gave slight test for arsenic.

One gave decided test for arsenic.

Eight gave test for calcium.

Six gave slight test for chlorides.

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[1] The experimental work embodied in these theses was performed in the Chemical Laboratory of the Philadelphia College of Pharmacy.

All gave test for traces of sulphates, none contained the full amount of water of crystallization, the highest being 51·7 per cent. and the lowest 20·1 per cent., the average being 39·5 per cent. as against 60·3 per cent. required for the crystallized salt. One sample thus contained more than twice the amount of sodium phosphate required by the U.S.P.

F. A. Butter finds in seven samples of *Boric Acid* a purity of 92·39 to 98·47 per cent., the average being 94·82 per cent.; traces of sulphuric acid were found in three samples.

Four samples of borax assayed from 88·12 per cent. to 98·03 per cent., the average being 91·83 per cent.

H. Seidman finds great variations in the strength of *Diluted Acetic Acid* obtained from both wholesale and retail sources.

Three samples from wholesale stores assayed 8·25 per cent., 10·44 per cent. and 13·09 per cent.

Three samples from retail stores assayed 5·25 per cent., 5·83 per cent. and 11·04 per cent.

None of the six samples showed more than traces of impurities.

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## ABSTRACTS FROM THESES ON PHARMACEUTICAL SUBJECTS.[1]

By E. Fullerton Cook.

*Suppositories.* By William W. Foster, Jr.—The author conducted a series of experiments to determine the value of various substances used in the moulding of cacao-butter-base suppositories, to prevent the adherence of the cooled suppository, and its subsequent cracking, when removed by force.

He used a formula in the tests which required special care to prevent the separation of a vegetable extract, owing to the presence of tannin; this particular suppository having caused considerable difficulty by sticking to the moulds and breaking when they are opened. The methods experimented with to prevent the difficulty were the dusting of the dried and clean moulds with lycopodium and with corn starch; also coating the moulds with liquid petro-

[1] The experimental work embodied in these theses was performed for the most part in the Pharmaceutical Laboratory of the Philadelphia College of Pharmacy.

latum and with a 4 per cent. alcoholic solution of castile soap; the latter being thinly spread upon the inner surface of the moulds with a piece of absorbent cotton before cooling. By the time they are ready to use, the evaporation of the alcohol leaves a thin coating of soap.

He also tried the use of clean, dry, unscratched moulds, well cooled, without other aid in the removing than the thorough cooling of the suppository.

He concludes that the latter method is the most simple and entirely satisfactory if the moulds are in good condition.

If they are injured by scratches the use of solution of soap is the best of the other methods, and seems to be without objection. Neither of the powders are very satisfactory if the moulds are in bad condition, and, being otherwise unnecessary, are of little value.

*The Aromatic Medicated Waters.* By Franklin W. Earl.—Experiments were made with the official (U.S.P., 8th Rev.) processes and also the British processes for the preparation of the aromatic waters to determine the relative worth or merit of the several methods.

In concluding the author says: "The hot water agitation method is the best, in that the water does not change on keeping and the process produces a saturated solution, and one which is clear and requires less time for preparation than other processes." Cinnamon water cannot be made by this method, however, as a turbid liquid results at once which will not clear.

In using purified talc he has found difficulty in freeing the water from the fine, suspended particles of talc which cannot be filtered out. The paper pulp is unpleasant to handle and does not seem to yield as strong a solution. Distillation with oils invariably yields a supersaturated milky liquid which must be filtered through a wetted filter, the resulting water having no seeming advantage over the agitation process.

The flavor, when distilled from the drug, as is directed in a number of British formulas, is finer, but the water is not transparent and requires refiltering. He suggests that the waters be made in larger stock containers, an excess of oil being allowed to remain in contact with the water and the shelf bottles filled from this, as needed, by filtering through a well-wetted filter.

*Mistura Glycyrrhizæ Composita* (*Brown Mixture*). By Frances R. Bell.—After a number of experiments with proposed formulas, pub-

lished during the last few years, which are intended to produce a clear preparation, free from the precipitate common in the well-known Brown Mixture of the average drug store, the writer concludes that if the official "pure extract of glycyrrhiza" is used as is directed, which is almost entirely soluble in water, the U.S.P. formula affords a more satisfactory preparation, in point of flavor, as well as appearance, than any of the proposed formulas.

The commercial "powdered extract of licorice," is not nearly so soluble as the "pure extract," and because of its large use in this preparation has caused the dissatisfaction. One sample of this commercial extract proved, upon examination, to be soluble only to the extent of 40 per cent.

*Cataplasma Kaolini.* By Herbert L. Flack.—The writer obtained a number of samples of kaolin from reliable sources and made them into cataplasm of kaolin by the U.S.P. (8th Rev.) formula, to determine if it could be relied upon, without modification, for all commercial grades of kaolin. He concludes that different samples of kaolin possess different absorbent properties, and that this quality of kaolin make it imperative that some modification, as to the amount of glycerin to be used in the formula, should be allowed. This result is further verified by similar statements from two large manufacturers of these preparations.

He also states that the preparation should be kept warm and occasionally stirred during at least four hours; otherwise a slow effervescence occurs in many samples, which renders it unfit to dispense in tight containers.

The suggested heating brings about a reaction, with small amount of carbonates which may be present and prevents further trouble.

He also recommends the addition of about 5 per cent. more of glycerin to the U.S.P. formula as being more generally satisfactory.

*Glycerinated Gelatin Suppositories.* By Elmer E. Scatchard.—A practical addition to the U.S.P. (8th Rev.) process for the making of glycerinated gelatin is here recommended. Instead of allowing the mass to cool in the dish, from which it is removed with considerable difficulty, he suggests that it be poured upon glass plates, slightly oiled with liquid petrolatum, and there allowed to cool. It may be removed from the plate without difficulty and cut into pieces for preservation, in the stock bottles.

He finds the following general formula to be most satisfactory. Slight modification will be needed to make these general directions applicable to all cases:—

Medicinal substance, a sufficient quantity; glycerinated gelatin, 3.5 grammes; glycerin, 2.5 grammes; water, 1 gramme.

Dissolve the medicinal substance in the water in a warmed mortar, if it is soluble, or triturate it thoroughly. Add the glycerin and then the melted glycerinated gelatin. Mix thoroughly, and pour into suitable moulds. The use of water alone to dissolve the medicinal substance and dilute the base is not desirable as subsequent evaporation occurs; the suppository shrinking to half its original size in a week.

The original paper includes a number of practical formulas as well as details for their successful use.

*Elixir Ferri, Quininæ et Strychninæ Phosphatum.* By Harry C. Hughes.—The formula for this elixir, introduced for the first time into the U.S.P. (8th Rev.), has been recommended by many who have used it, since published some years ago, yet almost every pharmacist can bear testimony to having had difficulty, at some time, with this preparation. One of the objections to the formula lies in the use of ammonia to neutralize the elixir; this being volatile is partially volatilized before the elixir has been kept for any length of time and the trouble begins. The experiments of the author have led him to suggest a slightly acid elixir, which is more permanent as to color and more free from likelihood of precipitation. Instead of neutralizing with ammonia water at the end of the process, as is directed in the U.S.P., he allows it to remain slightly acid and says: "It is miscible in all proportions with water and will keep well."

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## THE PROCTER MEMORIAL.[1]

By Henry Kraemer.

My interest in the movement to memorialize the life and work of Prof. William Procter, Jr., dates from the Put-in-Bay meeting of the American Pharmaceutical Association in 1899. When we were on the boat going to Cleveland, Mr. Ebert came up to me and said:

[1] Read at the annual meeting of the Pennsylvania Pharmaceutical Association, June, 1906.

"Kraemer, I have something on my mind that I want to tell you and have you think about. Several years ago, when Professor Trimble was alive, I mentioned to him the fact that the younger generation were forgetting the great work that was done for American pharmacy by Professor Procter, and said that I hoped something could be done to revive his memory. Trimble is gone, and I thought I would speak of this to you as his successor on the AMERICAN JOURNAL OF PHARMACY where Procter did so much of his best work."

Since that time I have taken special pains to look into the career of Professor Procter and find that in addition to his accomplishments as the most representative American pharmacist of his time, he was universally esteemed not only by his associates and colleagues but by all those who came in contact with him. His claim to rank as one of the most representative pharmacists that America has yet produced, rests upon these things: He was a retail pharmacist, a teacher of pharmacy, an investigator and writer on pharmaceutical subjects, editor of a pharmaceutical journal, one of the founders of the American Pharmaceutical Association, member of the Revision Committee of the U. S. Pharmacopœia, and author of text-books on pharmacy. At the time of his death, in 1874, it was said of him that "For a period of thirty-seven years his labors had aimed at raising the status of pharmacy, and have been of such importance and lasting value that the deceased may justly be regarded as the father of American pharmacy."

This was the estimate of him at the time of his death, and after the lapse of thirty years this sentiment still survives. We need not wonder then that a movement has been started to memorialize Procter and the ideals for which he stood. There is no profession, science or art but what is imbued with certain ideals and standards of attainment and sooner or later gives concrete expression to them. It ought then to be a source of gratification to the pharmacists of this country to engage in an undertaking which will perpetuate the ideals of one of their great leaders.

Happily there has never been any question as to the desirability of honoring Procter. There has, however, been considerable discussion as to the form which the memorial should take. After considering the matter in all its bearings, the erection of a bronze statue of Procter in the Smithsonian grounds at Washington has been decided upon as the most feasible under present conditions. This

decision I consider rather fortunate, as the unveiling of a monument with its attendant ceremonies will not only help the members of our profession but would also attract the attention of the public in such a way as to cause them to take a more active interest in furnishing means for the development of pharmacy. Monuments take rank as among the best educational influences of the civilized world, symbolizing as they do the best that has been achieved. They not only embody and preserve man's noblest ideals and highest purposes but also inspire and encourage the humblest to persevere in spite of all conditions and circumstances. I doubt not that the standards of pharmacy will be raised in this country by a concerted effort of pharmacists to perpetuate the ideals for which Procter stood.

Finally, I may say that this is the first attempt made in America to so honor a member of the pharmaceutical fraternity, and the co-operation of all is desirable that the undertaking may prove not only a success, but in order that pharmacists may show to the world that there are those among them worthy of the highest esteem, and that they themselves duly appreciate and honor the leaders in their ranks.

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## THE "HOME SANATORIUM" TREATMENT OF CONSUMPTION.[1]

By Joseph H. Pratt, A.M., M.D.,
Physician to Out-Patients, Massachusetts General Hospital,
Assistant in the Theory and Practice of Physic, Harvard University.

Some one has said "there are two kinds of consumption—that of the rich and that of the poor. The former is sometimes cured, the latter never." This still indicates the feeling of most physicians. The attempt to cure tuberculosis in the homes of the poor has seemed well nigh hopeless. Here and there, however, solitary workers like Dr. Flick, of Philadelphia, have obtained admirable results even in the slums of a great city.

As Dr. Osler said in his lecture before the Phipps Institute, "The problem of tuberculosis is in its most important aspect a home

[1] Read before the Johns Hopkins Hospital Medical Society, January 23, 1906, and abstracted from *Johns Hopkins Hospital Bulletin*, xvii, No. 182, p. 140.

problem. The vast majority of all tuberculous patients must be treated in their homes."[1]

The success of the sanatorium and climatic treatment of consumption is universally recognized. Yet the essential feature of the sanatorium treatment is careful regulation of the details of the daily life, and the essential feature of the climatic treatment is life in the open air.

In warm climates and in cold, at low altitudes and at high, consumption has been successfully treated wherever the out-of-door life has been adopted, and the modern method of treatment followed.

Since 1891 Dr. Bowditch has been demonstrating at the Sharon Sanatorium that consumption can be successfully treated in this supposedly unfavorable climate.

Dr. Millet, of East Bridgewater, was the first to advocate out-of-door sleeping in a harsh climate. In January, 1900, he published an important paper which bore the significant title, "The Night-Air of New England in the Treatment of Consumption."[2] It would be well if the truths contained in Dr. Millet's paper could be impressed upon every physician called upon to treat this disease.

Last winter I became acquainted with the methods used by Dr. C. L. Minor, of Asheville, N. C., in carrying out the hygienic-dietetic treatment among private patients outside of a sanatorium. The regulation of the daily life, the discipline enforced, and the results obtained by Dr. Minor compare favorably with those of the best sanatoria.

I became convinced that it was possible to carry out the same system in the homes of the poor even in a crowded city. For the opportunity to submit my plan to a practical test I am indebted to the Rev. Elwood Worcester, and to Emmanuel Church for financial support.

The reason that the results of home and dispensary treatment

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[1] Few if any States have greater facilities for sanatorium treatment than Massachusetts. It has been estimated that there are at the present time no less than 14,000 consumptives within its borders. For these 375 beds are available. In other words, about 3 per cent. can be treated in the State sanatorium. As consumption is a disease of the poor, it is evident that most of the cases comprising the remaining 97 per cent. must be treated in their homes, if they are to be treated at all.

[2] *Maryland Medical Journal*, January, 1900.

have been on the whole unsatisfactory is due to the lack of the careful supervision, and the lack of the strict discipline maintained in sanatoria. The tuberculosis dispensaries have been a potent factor in preventing the spread of the disease, and in educating the patients and the general public. But, I believe, relatively few cases treated by dispensary methods have been cured. This has certainly been the experience of my colleagues and myself in the out-patient department of the Massachusetts General Hospital, where the dispensary methods with the aid of the District Nursing Association have been employed for several years. The difference between our method and that of the tuberculosis dispensary is essentially this: that the tuberculosis dispensary gives a relatively small amount of care to a large number of patients, while we give a large amount of care to a small number of patients.

Our organization is known as the Emmanuel Church Tuberculosis Class. We sometimes speak of it as a "home sanatorium," and it bears much the same relation to a sanatorium that a correspondence course does to a college course. Every detail of the daily life is supervised and strict discipline maintained. A nurse is employed who devotes her time to visiting the members of the class. I prefer the term "friendly visitor" to nurse, because it describes more exactly the nature of her duties. She should be the family's wise counsellor, kindly and tactful, yet a good disciplinarian.

The class should number but a few members; I think the maximum limit should be twenty-five.

It should never be forgotten that it is the individual, not the disease, that needs treatment. We have been fortunate in having a small class, and so we have come to know our patients not simply as "this case of fibroid phthisis," and "that of pyopneumothorax," but as "Elmer" and "Patrick."

The class was organized the first of July, 1905. Most of the applicants for membership were referred to us by the Out-patient Department of the Massachusetts General Hospital.

The rule was established that no one would be accepted until the clinical diagnosis was confirmed either by finding the tubercle bacilli or by a positive tuberculin test. There has been, however, no difficulty in demonstrating tubercle bacilli in the sputum of all our patients on admission to the class.

Our aid has been refused to none. Those who were too ill for

home treatment have been visited by our nurse until admission could be secured to some hospital or until transferred to the District Nursing Association. We have placed consumptives in the Carney Hospital, the House of the Good Samaritan, and the Free Hospital for Consumptives.

Admission to the class has not been limited to favorable cases. In fact, only two of our patients were in the incipient stage of the disease.

All of our patients have been poor. None could afford even the $4.00 per week charged at the State Sanatorium. Not all the members are intelligent. Several are unusually stupid. In the family of Zelek P., a Russian Jew, no one can write English, and his wife cannot speak English.

Before admission to the class is granted the applicant must promise to give up all work, to live the out-of-door life, and to obey all the rules of the class. The truth of Brehmer's motto that "The most profitable work for a sick man is to get well," is impressed upon the patient. After the decision to join the class has been made a clinical history is taken and a complete physical examination made and entered on the clinical records. Once a month the lungs and sputum are re-examined. The patients are visited by the nurse as soon as they enter the class. Often before the decision has been made the nurse is sent to discuss the question with the invalid and his family, and to determine whether it will be possible to carry out the open-air treatment in their home. If there be no roof, balcony, piazza, or yard available for the rest treatment in the open air, the family must move to a tenement that will enable the tuberculous invalid to spend the entire day and night out-of-doors. Our friendly visitors have spent much time in seeking satisfactory tenements for the members. At the first visit the nurse examines the house and locality, obtains the social history of the case, ascertains the exact financial condition, and gives what instruction may be necessary to prevent the spread of the disease. The first visit usually requires two hours or more. A detailed report of this is at once given to the physician in charge. Subsequent visits by the nurse are made as required. Usually the patient is visited daily or at short intervals, until the details of the treatment are understood and followed. It has been found that repeated visits are often neces-

sary before some of the simplest rules are fixed in the minds of the invalid and his friends.

On January 5, 1906, the class numbered fifteen members, and all but one were sleeping out-of-doors. The single exception is a patient who would have done so had his landlord not prevented him from putting up a tent on the roof. At present he sleeps with his head out of the window of his bed-room. One of our class sleeps on a balcony, the others in tents placed either on the roof or on the ground near the house. The tents have generally been loaned —as few of the members could afford to buy them. An ordinary 7 feet by 7 feet wall tent with a fly has been found satisfactory. This costs only $7.25. Except the time taken for meals, bath and exercise, the entire day is spent in the recumbent or semi-recumbent posture. A comfortable reclining chair is furnished each patient.

The prescribed diet consists chiefly of milk, bread, fruit, butter, and oil. Most of our patients drink two to three quarts of milk a day. In a few instances unsalted butter has been furnished free. Cotton-seed oil has been found to be a satisfactory and inexpensive substitute for olive oil.

For the first few weeks no exercise is allowed, and later only when the temperature is normal the entire day. Then the exact amount of exercise is prescribed. The patient begins by walking five minutes in the morning and five in the afternoon. It is required that a watch be carried and the exact duration of the walk noted in his record book. After exercising, the temperature is taken and recorded. If rise of temperature occurs or if the patient becomes tired the amount of exercise is diminished. If the patient continues to improve, the exercise is gradually increased. Some of our patients now walk several hours daily. During the summer and fall our fever-free patients enjoyed the privileges of the Parker Hill Day Sanatorium.

An important aid in maintaining our strict hygienic regimen is furnished by the individual record book. The form of record adopted is that devised by Dr. Minor, of Asheville. Every detail of the day is recorded: The food eaten, including the total amount of milk and oil taken; the number of hours out-of-doors. The temperature and pulse-rate are entered and the quantity and character of the expectoration. The patients now keep out-of-door life

charts. This keeping of records serves to impress upon the members the importance of attention to detail in the treatment. It helps them to persevere in their monotonous life. We have found that it does not depress their spirits or cause introspection. It serves rather to keep up their courage. Most of the class take great pride in their records. Of course if a patient were doing badly, and losing weight rapidly, the individual record would be omitted.

A weekly meeting of the class has been held on Friday afternoons, formerly in my consulting room, now at the Massachusetts General Hospital. The record books are then inspected, and the patient's weight, temperature, pulse, and vital capacity are taken.

*Expenses.*—Emmanuel Church has paid for a special nurse, furnished tents, reclining chairs, and all other necessary supplies. To a few of the members a small amount of money has been loaned, and aid has been offered when it was necessary for a family to move to another tenement. A nominal fee of $2.00 a month is required from each patient. In some instances this has been remitted. The total expenses for the first six months ending January, 1906, were $513.00.

Miss Isabel Strong, acting as friendly visitor, gave her entire time to the work without pay during July and August. Dr. J. B. Hawes has assisted me in the medical work since the organization of the class. Recently Dr. C. S. Millet and Dr. N. K. Wood have associated themselves with us, and Dr. C. L. Tobey has taken charge of the laryngological work.

Old tuberculin has been used in a number of cases with apparent benefit. Pharmacotherapy has not been employed except for special conditions, such as constipation or diarrhœa. A few patients have been given creosote. Hydrotherapy has been found of value in every case. *Teilwaschungen*, full baths, chest compresses were the procedures selected.

*Results.*—Of the nine patients who have been members of the class for three months or more all show a gain in weight and all but two improvement in their general condition. One patient's weight has increased 40¼ pounds. In five of the nine cases the disease has been arrested. The term "arrested" is used in the sense in which it is employed by the Committee on Nomenclature of the National Association for Study and Prevention of Tuberculosis in their proposed classification.

WEIGHT-TABLE OF ALL WHO HAVE BEEN MEMBERS OF THE CLASS FOR THREE MONTHS OR MORE.

| Name. | Date of Admission. | Weight. | Last Examination. | Weight. | Gain. | No. of Weeks. |
|---|---|---|---|---|---|---|
| 1. Minnie E. . . . . | July 3 | 102¾ | Jan. 12 | 114¼ | 11½ | 27 |
| 2. Elmer C. . . . . | July 12 | 106 | Jan. 5 | 130½ | 24½ | 25 |
| 3. Zelek P. . . . . | July 12 | 131½ | Jan. 12 | 171 | 39½ | 26 |
| 4. John H. . . . . | July 18 | 131 | Jan. 12 | 153¼ | 22¼ | 25 |
| 5. Samuel T. . . . . | July 27 | 142 | Jan. 5 | 165¼ | 23¼ | 24 |
| 6. Maria F. . . . . | July 29 | 117 | Jan. 12 | 138½ | 21½ | 25 |
| 7. Samuel H. . . . . | Aug. 7 | 125½ | Jan. 12 | 132½ | 7 | 22 |
| 8. William F. . . . . | Sept. 2 | 145 | Jan. 12 | 166¼ | 21¼ | 19 |
| 9. Patrick C. . . . . | Sept. 15 | 120⅛ | Jan. 12 | 124 | 3⅞ | 17 |

Average gain, 19.4 pounds.

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## PROGRESS IN PHARMACY.

A QUARTERLY REVIEW OF SOME OF THE MORE IMPORTANT ADVANCES IN PHARMACY AND MATERIA MEDICA.

By M. I. Wilbert,
Apothecary at the German Hospital, Philadelphia.

The Fifty-ninth Congress of the United States has, so far, enacted several measures that bid fair to have far-reaching influences on the future development of the drug and apothecary business, and will no doubt tend to hasten the advent of better conditions in the practice of pharmacy.

By far the most interesting, if not the most vitally important, step that has as yet been made in the progress of pharmacy along professional lines, is embodied in the act that is now popularly referred to as "The Pure Food Law."

Pharmacists, as well as all friends of true pharmacy, are to be congratulated on the success that has attended the efforts that have been made at various times to hedge in, or to at least partially control, the fraudulent and even criminal practices that are so widely followed in connection with the manufacture and sale of what purport to be medicinal preparations. Pharmacists better than any other class realize the far-reaching possibilities, and pharmacists also know, and to some extent appreciate, the ease with which all kinds and classes of people have been deceived and defrauded in connection with so-called proprietary or patent medicines. While it is

true that from an economic point of view the drug sections of the pure food law are of comparatively minor importance it is also true that if properly enforced these sections will tend to prevent the unnecessary expenditure of millions of dollars, and, what is of even greater importance, will also tend to prevent the doing of untold injury by nostrums, both directly by producing untoward and unexpected physiologic effects, and indirectly, by failing to produce the effects claimed by the manufacturer or his agents. If the several sections relating to drugs and medicines are, as they should be, the forerunners of additional anti-narcotic legislation on the parts of the several State legislatures, they will contribute very materially to eliminate entirely many of the more objectionable preparations that are now sold as medicine.

Much of the ultimate success of pure drug, anti-nostrum and anti-narcotic legislation will necessarily depend on the support that is given to the enforcement of these laws by members of the several branches of the drug trade; and the ultimate results on pharmacy itself will necessarily be a reflection of the attitude taken by pharmacists in connection therewith.

It will be quite safe to assert, however, that quite apart from any action or lack of action that may be taken by the several branches of the drug trade, in connection with nostrums and narcotics, the physicians of the country, and even the people themselves, have been aroused by the, at times perhaps overdrawn, articles that have been published in lay journals, and will certainly demand legislation that will effectually control the misleading, not to say criminal, exploitation of dangerous or fraudulent nostrums. The pharmacist should and does know of the direct as well as of the indirect harm that has been done by the use of secret remedies, and it is gratifying indeed to note that the more representative members of the pharmaceutical profession, even in this country, have consistently been in favor of the particular kind of legislation involved in the recently enacted pure food bill. In support of this statement it will be but necessary to refer to the repeatedly expressed views of such prominent American pharmacists as the late Charles Rice, Prof. A. B. Prescott, John M. Maisch or Fred. Hoffman, and it may be interesting to add that the need for legislation along these very lines was discussed in the meetings of the American Pharmaceutical Association more than half a century ago and that an outline of a law

regulating the manufacture and sale of nostrums was reported to that association by Dr. Charles Rice, Prof. A. B. Prescott and Dr. Fred. Hoffman, some twenty-five years ago, at the meeting of the American Pharmaceutical Association in Pittsburg.

*The National Pure Food Bill*, as it was finally adopted in both houses of Congress, on recommendation of the joint Conference Committee, is entitled: "An Act preventing the manufacture, sale or transportation of adulterated or misbranded or poisonous or deleterious foods, drugs, medicines and liquors, and for regulating traffic therein and for other purposes."

The law itself is prefaced by the statement that: "Any person who shall violate any of the provisions of this law shall be guilty of a misdemeanor and for each offense shall, upon conviction thereof, be fined not to exceed $500 or shall be sentenced to one year's imprisonment, or both such fine and imprisonment, in the discretion of the court, and for each subsequent offense and conviction thereof shall be fined not less than $1,000 or sentenced to one year's imprisonment, or both such fine and imprisonment, in the discretion of the court."

The law as enacted is applicable only to such articles or preparations as may occur in interstate commerce and is not applicable to preparations or products that have a purely local origin and sale. The carrying out of the provisions of the act has been entrusted to the Secretary of the Treasury, the Secretary of Agriculture and the Secretary of Commerce and Labor, and the examinations of specimens of foods and drugs are to be under the direction of the Bureau of Chemistry of the Department of Agriculture.

The term "drug," according to the provisions of this act, "Shall include all medicines and preparations recognized in the United States Pharmacopœia or National Formulary for internal or external use, and any substance or mixture of substances intended to be used for the cure, mitigation, or prevention of disease of either man or other animals."

Drugs shall be deemed adulterated:

"First. If when a drug is sold under or by a name recognized in the United States Pharmacopœia or National Formulary, it differs from the standard of strength, quality, or purity as determined by the test laid down in the United States Pharmacopœia or National Formulary official at the time of investigation: Provided, That no

drug defined in the United States Pharmacopœia or National Formulary shall be deemed to be adulterated under this provision if the standard of strength, quality or purity be plainly stated upon the bottle, box, or other container thereof, although the standard may differ from that determined by the test laid down in the United States Pharmacopœia or National Formulary.

"Second. If its standard or purity fall below the professed standard or quality under which it is sold."

An article, in case of drugs, shall also be deemed to be misbranded:

"First. If it be an imitation of or offered for sale under the distinctive name of another article.

"Second. If it be labelled or branded so as to deceive or mislead the purchaser, or purport to be a foreign product when not so, or if the contents of the package as originally put up shall have been removed in whole or in part and other contents shall have been placed in such package, or if it fail to bear a statement on the label of the quantity or proportion of any alcohol, morphin, opium cocain, heroin, alpha or beta eucain, chloroform, cannabis indica, chloral hydrate, or acetanilid or any derivative or preparation of any such substances contained therein."

This latter provision is the one that met with strenuous opposition from the members and friends of the Proprietary Association of America. While the provision undoubtedly will, at first, entail a considerable amount of expense on the part of manufacturers of proprietary preparations, it is but a stepping-stone to the full and complete information that must eventually be and very properly should be required in connection with preparations of this kind. Full and complete publicity in connection with proprietary preparations would tend to eliminate all that are of a fraudulent or of a dangerous character, while it would, at the same time, be of tremendous advantage to the manufacturer who really has an original or a meritorious article for which he is desirous to secure a market.

The retail dealer, in drugs as well as foodstuffs, is exempt from prosecution under the provisions of this act "when he can establish a guaranty signed by the wholesaler, jobber, manufacturer or other party residing in the United States, from whom he purchases such articles, to the effect that the same is not adulterated or misbranded within the meaning of this act." Such a guaranty to afford protec-

tion must contain the name or names of the party making the sale and such party or parties shall in turn be held responsible. This provision would appear to be ample to protect the retail dealer who confines his business transactions to responsible parties, who, in turn, are willing and able to guarantee the purity and character of their wares.

The law itself is to become effective on and after January 1, 1907, and retail pharmacists can do much toward popularizing the provisions relating to drugs and medicines by themselves insisting that the several provisions of the act be complied with by manufacturers and dealers.

*Denatured Alcohol.*—The law providing for the use of tax-free alcohol in the arts and manufactures is another measure that has been enacted by the present Congress that bids fair to be of great economic importance to the community at large, and incidentally also to pharmacists. While tax-free alcohol will not be available for use in pharmaceutical products the use of denatured ethyl or grain alcohol, as a solvent in the mechanic arts, bids fair to replace the use of wood alcohol, and probably other solvents. The law will also tend to stimulate research and experiment with the use as also the economic production of alcohol and will eventually lead to more liberal provisions being made for the use of pure ethyl alcohol in the manufacture of chemicals and pharmaceutical galenicals.

*Alcohol Lamps.*—In connection with the prospective use of tax-free alcohol it may be interesting to refer to a paper read by Messrs. R. Duchemin and H. Carrol at the International Congress of Applied Chemistry. The authors reported a series of observations on the causes of chemical action on the metal parts of lamps and heating apparatus. They found that the quantity of acid in ethyl alcohol is sufficient to account for the way spirit attacks metals. The acidity resulting from burning methyl alcohol is slightly less than that of ethyl alcohol. Acetone causes comparatively little acidity. They also found that the temperature and the quantity of air consumed influence the proportion of acid yielded by the alcohol.

The corrosive influence of burning alcohol on metals is, however, but one of a number of problems that will present themselves with the more extended use of alcohol in the arts.

*The International Congress of Applied Chemistry*, which met in the city of Rome, Italy, on April 25, 1906, was well attended, and by

far the greater number of the eleven sections into which the Congress was divided had papers of unusual interest presented to them.

Section VIII, devoted to Hygiene, Medical and Pharmaceutical Chemistry, was unfortunately one of the less important ones. Even in this section, however, pharmacists, particularly German pharmacists, were well represented and took an active part in the proceedings.

Among the papers that are of interest to pharmacists we may mention "The Quantitative Estimation of Fatty Acids," by Dr. Braun; "Testing Commercial Carbonic Acid Gas," by W. Lohman; "The Use of Ferments in Analytical Work," by Professor Bourquelot; and "The Influence of Halogen Salts on the Fluorescence of Quinine," by M. Deniges.

The concluding general session of the Congress adopted at least one resolution that is deserving of careful consideration on the part of American pharmacists. In this resolution the International Congress for Applied Chemistry expresses the wish that in countries where the more detailed instruction in the chemistry of food products has not been otherwise provided for it be taken up and elaborated in connection with pharmaceutical instruction; the members of the Congress believing that the demands that are now being made on pharmacists by the ever-increasing advances in hygiene and therapeutics would serve to particularly fit members of the pharmaceutical profession to take up the study and investigation of food products.

*The Perkin Jubilee.*—The semi-centennial of the introduction of coal-tar colors, which has but recently been celebrated in England, is of interest to pharmacists in that the discovery of "mauve," the first of these dyes, by William Henry Perkin, grew out of his experiments to produce quinine artificially. Out of the subsequently very rapid development of the coal-tar color industry there grew, some twenty-five years later, the present-day gigantic business of coal-tar remedies, which, while they may prove to be an unmixed blessing to therapeutists, have certainly not had an altogether creditable effect on the evolution of pharmacy in America.

*The British Pharmaceutical Conference.*—The forty-third annual meeting of the British Pharmaceutical Conference was held in Birmingham during the week following July 23d. This city has the distinction of being the first meeting place to entertain the Confer-

ence for the third time, and the meeting itself is reported to have been an eminently successful one.

The proceedings were inaugurated on the evening of Monday, July 23d, by a reception, in the City Municipal Buildings, where the visiting members were received by the Lord Mayor and Lady Mayoress of Birmingham assisted by members of the City Council.

The scientific business of the Conference was formally opened on Tuesday morning by the usual addresses of welcome, which in turn were followed by the annual address of the President, Mr. W. A. H. Naylor. This address was largely devoted to a review of some of the problems connected with common or well-known drugs that require further elucidation and study. The review includes such well-known and widely used drugs as aloes, balsam of tolu, cantharides, gelsemium, ginger, guaiac resin, hops, male fern, myrrh, senega and veratrin, and is certainly deserving of the attention of all who are in any way interested in research work. The communications read before the Conference, while not epoch-making, included many that were of more than usual interest, and all of the papers contained material that will be found to be of practical value to the pharmacist.

Messrs. Farr and Wright discussed the "Nitric Acid Process for the Determination of Strychnine," as adopted in the U.S.P., and also made some further communication on their work in connection with "Standardized Powdered Extract of Nux Vomica."

Mr. H. G. Smith read a paper on "Some Recent Chemical Discoveries in the Eucalyptus," in which he calls attention to the numerous definite constituents that are obtainable from the several species of Eucalyptus.

*The Activity of Pepsin* after brief contact with certain inorganic compounds. The author of this paper, Mr. J. F. Tocher, concludes that solutions of alkaline carbonates and hydrates destroy the activity of, and should not be prescribed with, pepsin; bismuth carbonate precipitates pepsin from aqueous solutions; morphine retards the action of pepsin.

*Strophanthus and Strophanthin.*—Under this title E. W. Mann records some interesting experiments in estimating the amount as well as the nature of the active principle of strophanthus. He concludes that in view of the very marked difference in the activity of the glucoside, obtained from the several varieties of strophanthus,

standardization is only of real value when the botanical source of the seeds is fully known.

*Flora of the Lickey Hills.*—This paper, by Mr. John Humphreys, includes an interesting account of the geological features as well as the flora of the Lickey Hills and represents a contribution on the local flora that has come to be an annual feature of the B.P.C. This, it may be added, is a feature that might well be introduced into our own annual meeting of the American Pharmaceutical Association.

Another feature that appears to be well worth imitating is to be found in the very full and complete abstracts of the papers that are published in all of the British pharmaceutical journals within a day or two after the close of the Conference meetings.

Mr. Thomas Tyrer was elected to preside over the Conference at its next meeting, and Manchester was unanimously selected as being the most desirable place of meeting.

*The National Formulary.*—The third edition, second decennial revision, of this well-known and now legally recognized formulary, has just been issued, and the first edition of 5,000 copies is said to have been sold before publication. The recognition that has been accorded the National Formulary in the recently enacted "Pure Food Law" gives to this book an entirely new aspect and will make its possession practically compulsory, not alone to wholesale dealers and manufacturers but also to the retail pharmacist. Fortunately the price at which the volume is being sold, $1.00, cannot be said to be exorbitant, and there is really no excuse on the part of the pharmacist why the Formulary should not be consulted at first hand.

The book itself, while it contains many excellent formulas that are practically above reproach, will undoubtedly meet with considerable, just as well as unjust, criticisms, all of which will tend to make future revisions of the book even more desirable and more perfect.

Probably the most striking of the new features of the book is to be found in the duplicate weights and measures. This inclusion of both the metric and apothecaries weights and measures detracts considerably from the appearance and the true usefulness of the book in that it is distracting; the formulas themselves losing much of the simple form and concise character that served to dignify and to enhance the working value of earlier editions of the Formulary.

*New Belgian Pharmacopœia.*—The recently issued third edition of the Belgian Pharmacopœia is the latest addition to the newly revised national pharmacopœias.

As might have been expected from the interest that was taken by the Belgian Government in the proceedings of the Conference for the Unification of the Formulæ of Potent Medicaments, the protocol adopted by that Conference has been closely adhered to in the descriptions and formulas contained in this pharmacopœia.

While the Belgian Pharmacopœia cannot be said to embody any distinctively radical innovations it does contain a number of features that might profitably be included in our own U.S.P.

As in some of the other recently issued foreign pharmacopœias directions for sterilizing medicinal preparations, as well as the apparatus with which they are to come in contact, are given at some length.

Wherever practicable, essential oils are represented by their principal constituents free from terpenes.

Physiological sodium chloride solution is directed to be made by dissolving 0·8 per cent. of sodium chloride in distilled water, and sterilizing the resulting solution.

A list of the drugs and preparations which must be kept in every pharmacy is appended, also a list of the reagents and the necessary apparatus for carrying out the prescribed chemical tests.

*Austrian Pharmacopœia.*—At the urgent request of the Austrian pharmacists the Government has deferred the date on which the recently published pharmacopœia is to become official, until January 1, 1907. This has been done to allow pharmacists the necessary time to become acquainted with the many changes that have been introduced and to prepare their medicaments accordingly.

*Belgian Pharmacists Decorated.*—Belgium is one of the comparatively few countries where the educational qualifications that are exacted of pharmaceutical students are exceptionally high, the degree of Doctor of Science being required before a student can register as a pharmaceutical student in one of the three universities that give pharmaceutical instruction. That the ultimate results are appreciated is evidenced by the fact that the Belgian Government has recently paid a high compliment to the practitioners of pharmacy in that country by decorating no less than eleven Belgian pharmacists with crosses as Chevaliers of the Order of Leopold.

The recent number of the *Journal de Pharmacie d'Anvers* contains an interesting account of the banquet which took place on June 10th, and also contains biographical sketches and portraits of the decorated pharmacists.

*Abbreviations for Metric Units.*—The French Minister of Public Instruction, M. Briand, has by a recent decision arranged that all professors and teachers throughout France are in future to employ distinctive abbreviations for the various weights and measures. These abbreviations are particularly interesting in that, with the single exception of the three higher designations of the measure of length, myriamétre, Mm.; kilométre, Km.; and hectométre, Hm., all of the abbreviations are lower-case letters.

Thus we have g. for gramme in place of the Gm. of the U.S.P., and kl., l., and mil., for kilolitre, litre, and millilitre. The latter abbreviation corresponds to what is ambiguously abbreviated Cc. in the U.S.P., and has the added advantage that it allows of further subdivision of the millilitre, or, as we choose to call it, the cubic centimeter, for which the abbreviations, d. or dmil. and c. or cmil., for decimil and centimil respectively, have been proposed. (*Phar. Jour.*, July 28, 1906, page 65.)

*The British Medical Association and Secret Remedies.*—Even the proverbially slow-going English people are beginning to awaken to a realization of the frauds that have been and are now being perpetrated under the guise of proprietary medicine. The medico-political committee of the British Medical Association, at the recent annual representative meeting, presented a series of recommendations with regard to the sale of proprietary remedies that, if they could be enacted into a law, would go far toward reducing the sale of these preparations in England.

It was proposed:

(*a*) That medicines which are supplied otherwise than upon medical, dental or veterinarian prescriptions no condition of sale short of the publicity on each packet of medicine of the name and the quantity of each of its constituents be permitted.

(*b*) That the label should be made a warranty, and that false descriptions, whether on the label or in advertisement, should be made an offense.

(*c*) That the provisions of the foods and drugs acts should be applied to proprietary medicines. (*Phar. Jour.*, 1906, page 46.)

*The Plague of Fancy Names.*—Gnomon (*Phar. Jour.*, May 12, 1906, page 550), in commenting on the renaming of well-known and even widely used substances, calls attention to the overwhelming flood of fancy names with which medicine and pharmacy are being threatened at the present time.

The abuse growing out of the multiplicity of trade-mark names for the same article are even now burdensome and annoying and would certainly appear to be deserving of the thought and the attention of pharmaceutical associations, with a view of offering some relief or of making at least some effort to induce manufacturers to discontinue the practice.

*Exclusion of Secret Remedies from North Dakota.*—The officials of North Dakota appear to be willing to enforce the recently enacted legislation to control the sale of secret remedies in that State.

Bulletin 69 of the North Dakota Agricultural Experiment Station, issue of June, 1906, calls attention to a number of articles that have so far been examined by the officials. The further sale of these preparations will not be permitted in the State until all of the several requirements of the law have been fully complied with. (*Jour. Am. Med. Assoc.*, July 28, 1906.)

*New Elements.*—Sir William Crookes, in a note published in the *Chemical News*, describes spectroscopic observations of the phosphorescent glow emitted by some of the rare earths, exposed to cathode rays in vacuo, which indicate the existence of two new elements. These he has provisionally named ionium and incognitum.

*Oxidation Compounds of Strychnine.*—Mattison has produced a series of oxidation compounds of strychnine by means of hydrogen dioxide. Some of these compounds he found to be acid and some basic in their nature. One of the more interesting which he designates as strychnine oxide, occurs as large colorless prisms having the formula $C_{21}H_{22}N_2O_3 + {}_3H_2O$. It is found to have practically as poisonous properties as strychnine. (*Chem. and Drug.*, 1906, page 810.)

*Corosuccin.*—This is said to be an antiseptic and is composed of a concentrated solution of succinic acid with traces of mercuric chloride. It is asserted that succinic acid materially enhances the antiseptic action of mercuric chloride; so much so that a 1–20,000 solution of mercuric chloride containing 2.5 per cent. of succinic acid is said to have an antiseptic value corresponding to that of a 2 per cent. solution of mercuric chloride. (*Apothek. Zeit.*, 1906, page 479.)

*Estoral.*—This is described as the boric ether of menthol and occurs in the form of a white crystalline powder having a faint odor of menthol. Estoral when brought in contact with mucous membranes is rapidly decomposed into its constituents. It has been used, with reported good results, in cases of chronic nasal catarrh. (*Jour. d. Phar. et d. Chem.*, July, 1906, page 25.)

*New Sidonal.*—According to the researches of F. Zernik (*Apothek. Zeit'g*, 1906, page 463) this is not a readily defined chemical compound, but a mixture of approximately 75 parts of quinic anhydride and 25 parts of quinic acid.

*Omoral.*—This is said to be a compound of silver and albumin, containing 10 per cent. of silver. It occurs as a fine yellowish powder soluble in physiological salt solution and in alkaline liquids in the proportion of about 3–100. (*Apothek. Zeit.*, 1906, page 491.)

*Ovogal.*—This is said to be a combination of ovalbumin with glycocholic and taurocholic acids. It is being exploited as a cholagogue and occurs as a greenish yellow powder which is insoluble in most solvents, but dissolves, with decomposition, in alkaline solutions. Ovogal is directed to be given in doses of one teaspoonful suspended in a suitable vehicle, or given in cachets or capsules. (*Phar. Zeit.*, 1906, page 460.)

*Propylbarbituric acid* is being sold in Germany as a substitute for proponal, di-propyl barbituric acid, a recently introduced hypnotic.

According to Dr. F. Zernik, who has recently reviewed the literature relating to proponal and veronal, the latter is to be considered the more active in smaller doses (below 0.3 gm.), while proponal undoubtedly possesses the advantage of being more active, but the disadvantage of being less safe, in doses of 0·4 or 0·5 grammes (*Apothek. Zeit.*, 1906, page 524).

*Salicin versus Salicylates.*—An abstract in the *Pharmaceutical Journal* (May 12, 1906, page 548) calls renewed attention to the repeatedly made claims that salicin is preferable to the salicylates for the treatment of acute rheumatism. Salicin acts as a tonic, whereas the salicylates are powerful depressants. Cases treated with salicylates are very apt to drift into endocarditis, with permanent valvular lesions.

*Sambunigrin.*—Bourquelot and Danjou have isolated a glucoside from the leaves of Sambucus nigra which, when decomposed with emulsin, yielded hydrocyanic acid, benzoic aldehyde and glucose.

The new glucoside is slightly bitter and crystallizes in long, white, needle-shaped crystals. It is readily soluble in water, alcohol and in ether. (*Phar. Post.*, 1906, page 351, from *Compt. Rend.*)

*Sulphopyrine.*—This is the name applied to antipyrine-para amido benzol sulphonate, which is now being introduced as a remedy for migraine and similar affections. It occurs as a white, non-hygroscopic powder which is very soluble in water. The dose is 1 gramme in half a glassful of water, and may be repeated several times a day. (*Phar. Jour.*, May 26, 1906, page 645.)

In a recent communication from the Pharmaceutical Institute of the University of Berlin, Dr. F. Zernik asserts that sulphopyrine is not the true antipyrine salt of para amido benzol sulphonic acid, but is a mixture composed approximately of 86·5 parts of antipyrine and 13·5 parts of sulphonic acid. (*Apothek. Zeit.*, 1906, page 549.)

*Styracol.*—This is said to be a combination of cinnamic acid and guaiacol which when brought in contact with alkaline solutions decomposes into its constituents.

Styracol is insoluble in water or in diluted acids and is devoid of odor or taste. It may be given in doses of 0·50 to 1·00 gm. three or four times a day and has been recommended as being an efficient intestinal antiseptic. (*Jour. d. Phar. et d. Chem.*, July, 1906, page 25.)

*Theophorin.*—This is described as being a double salt of theobromin sodium and sodium formate. It occurs as a fine white powder that is readily soluble in water and is said to be an efficient diuretic. It may be given in doses of 0·5 to 1·0 gramme three times a day, preferably in the form of powder, as the solutions are readily decomposed by acids, even carbonic acid causing a turbidity and gradual decomposition. (*Phar. Post.*, 1906, page 298.)

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## PURE FOOD BILL.

**An Act for preventing the manufacture, sale, or transportation of adulterated or misbranded or poisonous foods, drugs, medicines, and liquors, and for regulating traffic therein, and for other purposes.**

*Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled*, That it shall be unlawful for any person to manufacture within any Territory or the District of Columbia any article of food or drug which is adulterated or misbranded, within the meaning of this Act; and any person

who shall violate any of the provisions of this section shall be guilty of a misdemeanor, and for each offense shall, upon conviction thereof, be fined not to exceed five hundred dollars or shall be sentenced to one year's imprisonment, or both such fine and imprisonment, in the discretion of the court, and for each subsequent offense and conviction thereof shall be fined not less than one thousand dollars or sentenced to one year's imprisonment, or both such fine and imprisonment, in the discretion of the court.

SEC. 2. That the introduction into any State or Territory or the District of Columbia from any other State or Territory or the District of Columbia, or from any foreign country, or shipment to any foreign country of any article of food or drugs which is adulterated or misbranded, within the meaning of this Act, is hereby prohibited; and any person who shall ship or deliver for shipment from any State or Territory or the District of Columbia to any other State or Territory or the District of Columbia, or to a foreign country, or who shall receive in any State or Territory or the District of Columbia from any other State or Territory or the District of Columbia, or foreign country, and having so received, shall deliver, in original unbroken packages, for pay or otherwise, or offer to deliver to any other person, any such article so adulterated or misbranded within the meaning of this Act, or any person who shall sell or offer for sale in the District of Columbia or the Territories of the United States any such adulterated or misbranded foods or drugs, or export or offer to export the same to any foreign country, shall be guilty of a misdemeanor, and for such offense be fined not exceeding two hundred dollars for the first offense, and upon conviction for each subsequent offense not exceeding three hundred dollars or be imprisoned not exceeding one year, or both, in the discretion of the court: *Provided*, That no article shall be deemed misbranded or adulterated within the provisions of this Act when intended for export to any foreign country and prepared or packed according to the specifications or directions of the foreign purchaser when no substance is used in the preparation or packing thereof in conflict with the laws of the foreign country to which said article is intended to be shipped; but if said article shall be in fact sold or offered for sale for domestic use or consumption, then this proviso shall not exempt said article from the operation of any of the other provisions of this Act.

SEC. 3. That the Secretary of the Treasury, the Secretary of Agriculture, and the Secretary of Commerce and Labor shall make uniform rules and regulations for carrying out the provisions of this Act, including the collection and examination of specimens of foods and drugs manufactured or offered for sale in the District of Columbia, or in any Territory of the United States, or which shall be offered for sale in unbroken packages in any State other than that in which they shall have been respectively manufactured or produced, or which shall be received from any foreign country, or intended for shipment to any foreign country, or which may be submitted for examination by the chief health, food, or drug officer of any State, Territory, or the District of Columbia, or at any domestic or foreign port through which such product is offered for interstate commerce, or for export or import between the United States and any foreign port or country.

SEC. 4. That the examinations of specimens of foods and drugs shall be made in the Bureau of Chemisty of the Department of Agriculture, or under the direction and supervision of such Bureau, for the purpose of determining from such examinations whether such articles are adulterated or misbranded within the meaning of this Act; and if it shall appear from any such examination that any of such specimens is adulterated or misbranded within the meaning of this Act, the Secretary of Agriculture shall cause notice thereof to be given to the party from whom such sample was obtained. Any party so notified shall be given an opportunity to be heard, under such rules and regulations as may be prescribed as aforesaid, and if it appears that any of the provisions of this Act have been violated by such party, then the Secretary of Agriculture shall at once certify the facts to the proper United States district attorney, with a copy of the results of the analysis or the examination of such article duly authenticated by the analyst or officer making such examination, under the oath of such officer. After judgment of the court, notice shall be given by publication in such manner as may be prescribed by the rules and regulations aforesaid.

SEC. 5. That it shall be the duty of each district attorney to whom the Secretary of Agriculture shall report any violation of this Act, or to whom any health or food or drug officer or agent of any State, Territory, or the District of Columbia shall present satisfactory evidence of any such violation, to cause appropriate pro-

ceedings to be commenced and prosecuted in the proper courts of the United States, without delay, for the enforcement of the penalties as in such cases herein provided.

SEC. 6. That the term "drug," as used in this Act, shall include all medicines and preparations recognized in the United States Pharmacopœia or National Formulary for internal or external use, and any substance or mixture of substances intended to be used for the cure, mitigation, or prevention of disease of either man or other animals. The term "food," as used herein, shall include all articles used for food, drink, confectionery, or condiment by man or other animals, whether simple, mixed, or compound.

SEC. 7. That for the purposes of this Act an article shall be deemed to be adulterated:

In case of drugs:

(1) If, when a drug is sold under or by a name recognized in the United States Pharmacopœia or National Formulary, it differs from the standard of strength, quality, or purity, as determind by the test laid down in the United States Pharmacopœia or National Formulary official at the time of investigation: *Provided*, That no drug defined in the United States Pharmacopœia or National Formulary shall be deemed to be adulterated under this provision if the standard of strength, quality, or purity be plainly stated upon the bottle, box, or other container thereof, although the standard may differ from that determined by the test laid down in the United States Pharmacopœia or National Formulary.

(2) If its strength or purity fall below the professed standard or quality under which it is sold.

In the case of confectionery:

If it contain terra alba, barytes, talc, chrome yellow, or other mineral substance or poisonous color or flavor, or other ingredient deleterious or detrimental to health, or any vinous, malt or spirituous liquor or compound or narcotic drug.

In the case of food:

(1) If any substance has been mixed and packed with it so as to reduce or lower or injuriously affect its quality or strength.

(2) If any substance has been substituted wholly or in part for the article.

(3) If any valuable constituent of the article has been wholly or in part abstracted.

(4) If it be mixed, colored, powdered, coated, or stained in a manner whereby damage or inferiority is concealed.

(5) If it contain any added poisonous or other added deleterious ingredient which may render such article injurious to health: *Provided*, That when in the preparation of food products for shipment they are preserved by any external application applied in such manner that the preservative is necessarily removed mechanically, or by maceration in water, or otherwise, and directions for the removal of said preservative shall be printed on the covering or the package, the provisions of this Act shall be construed as applying only when said products are ready for consumption.

(6) If it consists in whole or in part of a filthy, decomposed, or putrid animal or vegetable substance, or any portion of an animal unfit for food, whether manufactured or not, or if it is the product of a diseased animal, or one that has died otherwise than by slaughter.

SEC. 8. That the term "misbranded," as used herein, shall apply to all drugs, or articles of food, or articles which enter into the composition of food, the package or label of which shall bear any statement, design, or device regarding such article, or the ingredients or substances contained therein which shall be false or misleading in any particular, and to any food or drug product which is falsely branded as to the State, Territory, or country in which it is manufactured or produced.

That for the purposes of this Act an article shall also be deemed to be misbranded:

In case of drugs:

(1) If it be an imitation of or offered for sale under the name of another article.

(2) If the contents of the package as originally put up shall have been removed, in whole or in part, and other contents shall have been placed in such package, or if the package fail to bear a statement on the label of the quantity or proportion of any alcohol, morphine, opium, cocaine, heroin, alpha or beta eucaine, chloroform, cannabis indica, chloral hydrate, or acetanilid, or any derivative or preparation of any such substances contained therein.

In the case of food:

(1) If it be an imitation of or offered for sale under the distinctive name of another article.

(2) If it be labeled or branded so as to deceive or mislead the purchaser, or purport to be a foreign product when not so, or if the contents of the package as originally put up shall have been removed in whole or in part and other contents shall have been placed in such package, or if it fail to bear a statement on the label of the quantity or proportion of any morphine, opium, cocaine, heroin, alpha or beta eucaine, chloroform, cannabis indica, chloral hydrate, or acetanilid, or any derivative or preparation of any of such substances contained therein.

(3) If in package form, and the contents are stated in terms of weight or measure, they are not plainly and correctly stated on the outside of the package.

(4) If the package containing it or its label shall bear any statement, design, or device regarding the ingredients or the substances contained therein, which statement, design, or device shall be false or misleading in any particular: *Provided*, That an article of food which does not contain any added poisonous or deleterious ingredients shall not be deemed to be adulterated or misbranded in the following cases:

(1) In the case of mixtures or compounds which may be now or from time to time hereafter known as articles of food, under their own distinctive names, and not an imitation of or offered for sale under the distinctive name of another article, if the name be accompanied on the same label or brand with a statement of the place where said article has been manufactured or produced.

(2) In the case of articles labeled, branded, or tagged so as to plainly indicate that they are compounds, imitations, or blends, and the word "compound," "imitation," or "blend," as the case may be, is plainly stated on the package in which it is offered for sale: *Provided*, That the term blend as used herein shall be construed to mean a mixture of like substances, not excluding harmless coloring or flavoring ingredients used for the purpose of coloring and flavoring only: *And provided further*, That nothing in this Act shall be construed as requiring or compelling proprietors or manufacturers of proprietary foods which contain no unwholesome added ingredient to disclose their trade formulas, except in so far as the provisions of this Act may require to secure freedom from adulteration or misbranding.

SEC. 9. That no dealer shall be prosecuted under the provisions

of this Act when he can establish a guaranty signed by the wholesaler, jobber, manufacturer, or other party residing in the United States, from whom he purchases such articles, to the effect that the same is not adulterated or misbranded within the meaning of this Act, designating it. Said guaranty, to afford protection, shall contain the name and address of the party or parties making the sale of such articles to such dealer, and in such case said party or parties shall be amenable to the prosecutions, fines, and other penalties which would attach, in due course, to the dealer under the provisions of this Act.

SEC. 10. That any article of food, drug, or liquor that is adulterated or misbranded within the meaning of this Act, and is being transported from one State, Territory, District, or insular possession to another for sale, or, having been transported, remains unloaded, unsold, or in original unbroken packages, or if it be sold or offered for sale in the District of Columbia or the Territories, or insular possessions of the United States, or if it be imported from a foreign country for sale, or if it is intended for export to a foreign country, shall be liable to be proceeded against in any district court of the United States within the district where the same is found, and seized for confiscation by a process of libel for condemnation. And if such article is condemned as being adulterated or misbranded, or of a poisonous or deleterious character, within the meaning of this Act, the same shall be disposed of by destruction or sale, as the said court may direct, and the proceeds thereof, if sold, less the legal costs and charges, shall be paid into the Treasury of the United States, but such goods shall not be sold in any jurisdiction contrary to the provisions of this Act or of the laws of that jurisdiction: *Provided, however*, That upon the payment of the costs of such libel proceedings and the execution and delivery of a good and sufficient bond to the effect that such articles shall not be sold or otherwise disposed of contrary to the provisions of this Act, or the laws of any State, Territory, District, or insular possession, the court may by order direct that such articles be delivered to the owner thereof. The proceedings of such libel cases shall conform, as near as may be, to the proceedings in admiralty, except that either party may demand trial by jury of any issue of fact joined in any such case, and all such proceedings shall be at the suit of and in the name of the United States.

SEC. 11. The Secretary of the Treasury shall deliver to the Secretary of Agriculture, upon his request from time to time, samples of foods and drugs which are being imported into the United States or offered for import, giving notice thereof to the owner or consignee, who may appear before the Secretary of Agriculture, and have the right to introduce testimony, and if it appear from the examination of such samples that any article of food or drug offered to be imported into the United States is adulterated or misbranded within the meaning of this Act, or is otherwise dangerous to the people of the United States, or is of a kind forbidden entry into, or forbidden to be sold or restricted in sale in the country in which it is made or from which it is exported, or is otherwise falsely labeled in any respect, the said article shall be refused admission, and the Secretary of the Treasury shall refuse delivery to the consignee and shall cause the destruction of any goods refused delivery which shall not be exported by the consignee within three months from the date of notice of such refusal under such regulations as the Secretary of the Treasury may prescribe: *Provided*, That the Secretary of the Treasury may deliver to the consignee such goods pending examination and decision in the matter on execution of a penal bond for the amount of the full invoice value of such goods, together with the duty thereon, and on refusal to return such goods for any cause to the custody of the Secretary of the Treasury, when demanded, for the purpose of excluding them from the country, or for any other purpose, said consignee shall forfeit the full amount of the bond: *And provided further*, That all charges for storage, cartage, and labor on goods which are refused admission or delivery shall be paid by the owner or consignee, and in default of such payment shall constitute a lien against any future importation made by such owner or consignee.

SEC. 12. That the term "Territory," as used in this Act, shall include the insular possessions of the United States. The word "person," as in this Act, shall be construed to import both the plural and the singular, as the case demands, and shall include corporations, companies, societies and associations. When construing and enforcing the provisions of this Act, the act, omission, or failure of any officer, agent, or other person acting for or employed by any corporation, company, society, or association, within the scope of his employment or office, shall in every case be also deemed to be

the act, omission, or failure of such corporation, company, society, or association as well as as that of the person.

SEC. 13. That this Act shall be in force and effect from and after the first day of January, nineteen hundred and seven.

Approved, June 30, 1906.

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## CORRESPONDENCE.

Interest in the Procter Monument is becoming quite general, and the desire to perpetuate the ideals and principles for which Professor Procter stood, seems to be gaining a hold in various quarters.

The following letter from Prof. John Attfield, F.R.S., of Watford, England, is of special interest, showing not only Professor Attfield's interest in the movement of American Pharmacists to honor one of their calling but also his high esteem of Professor Procter and his attainments:—

ASHLANDS, WATFORD, HERTS,
13 August, 1906.

DR. HENRY KRAEMER.

*My dear Sir:*—Infirmities of age will prevent me attending the approaching meeting of the American Pharmaceutical Association, but by letter I can and do beg the William Procter, Jr., Memorial Fund Committee to accept a small contribution from me towards the cost of the bronze monument commemorative of my dear old friend and of his work for scientific, educational and literary pharmacy. I enclose a money order for twenty-five dollars.

Yours faithfully,

JOHN ATTFIELD.

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## BOOK REVIEWS.

LEHRBUCH DER INTOXIKATIONEN. Von Dr. Rudolf Kobert, Kaiserlich Russischen Staatsraat, ordentlichem Professor und Direktor des Institutes für Pharmakologie und physiologische Chemie der Landesuniversität Rostock. Zweite durchweg neubearbeitete Auflage. Zwei Bände. Mit Abbildungen im Text. Stuttgart: Verlag von Ferdinand Enke. 1902–1904–1906.

This remarkable work of Kobert's on Poisons continues to be one of the great masterpieces in pharmacology and physiological chemistry. It is profusely illustrated, the illustrations being for the most part original and very excellent. It is intended as a hand-

book for students in medicine and physicians, and is published in two volumes. Volume I is devoted to a general consideration of the subject of poisons and the post-mortem recognition of poisons. Volume II is divided practically into three parts: (1) The consideration of those substances which produce decided alterations in the tissues, as acids, halogens, alkalies and alkaline earths, arsenic, antimony, phosphorus, organic substances, animal products, plant products, as alkaloids, ethereal oils, enzymes, etc. (2) Blood poisons, these being divided according as they affect the blood corpuscles or produce various "ämoglobin" compounds. In part 3 those poisons are considered which cause death, but without producing marked alterations in the tissues, and these are taken up as they affect the cerebrospinal system or act upon the heart.

The entire work consists of over 1600 pages with 211 illustrations and is the most important book on the subject of poisons that has been published. It will be found useful to the food analyst, who is theoretically trying to determine the nature of poisons, as well as the therapeutist whose notion as to what constitutes a poison is often vague and inadequate. The physiological chemist and pharmacologist (the latter class of whom there are unfortunately too few representatives in this country) will find this book an epitome of scientific research marked by an erudition which makes it, as has been stated, a masterpiece of its kind.

ANNALES DE L'INSTITUT COLONIAL DE MARSEILLE. Treizième année. 2e Série. 3e volume, 1905.

In this volume of the Annales of the Colonial Institute of Marseilles, which was founded by Professor Edward Heckel and published under his direction, are the following papers:—

(1) Madagascar in 1756. By M. Bernard. With a preface by Professor Gaffarel.

(2) A Chemical Study of the Oil of the Wood of one of the Diptocarpeæ. By M. Et. Lefeuvre.

(3) The Morphology and Anatomy of Hura Crepitans. By M. Gilles.

(4) The External Morphology and Anatomy of *L' Epeura Falcata* Aublet. By Prof. L. Courchet.

(5) *Perriera Madagascariensis* Courchet. A New Poisonous Simarubaceous Plant. By L. Courchet.

(6) The Botany and Chemistry of *Raphia Pedunculata.* By M. M. Decrock et Fr. Schlagdenhauffen.

(7) Morphology and Anatomy of the Larva *Io Irene Boisduval.* By M. L. Bordas, D. Sc.

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## JUBILEE OF THE COAL TAR INDUSTRY.

The first meeting in connection with the international celebration of the fiftieth anniversary of the discovery of the first aniline color by Sir William Henry Perkin was held at the Royal Institution, London, on July 26. It was a beautiful morning, and the old lecture-theatre was well filled on the ground floor with an audience of men and women.

At a few minutes after eleven Professor Meldola opened the proceedings by offering Sir William Perkin "hearty congratulations on having lived to witness the consummation of his labors," and on having received the honor of knighthood. Next Professor Meldola referred to the appropriateness of the meeting-place, for it was in that building that Michael Faraday first discovered benzene, the starting-point in the manufacture of aniline colors. [The original sample of benzene was on the table, beside it being early samples of mauve dye and fabrics dyed with the first specimen of mauve.] Professor Meldola next welcomed the foreign colleagues, the names being received with a great outburst of applause. The celebration scheme was then outlined as arranged at the Mansion House meeting in February, consisting briefly of (1) portrait of Sir William Perkin painted by Mr. A. S. Cope, A.R.A., to be held by Sir William during his life and afterwards to be offered to the nation; (2) marble bust by Mr. F. W. Pomeroy, A.R.A., for the Chemical Society's library; and (3) endowment of a Perkin research fund, towards which some £2,000 has already been received.

The portrait was then formally presented to Sir William Perkin, the green curtain which covered it being drawn aside, amid tremendous applause. The portrait represents Sir William with a skein of mauve silk in his hand, on the table being flasks and beakers containing dye stuffs. Attention was next called to the bust, which is a plaster replica of the marble bust, Professor Meldola stating that when it is placed in the library of the Chemical Society it will "act

as an encouragement to all the future generations of chemists in this country."

Geheimrath Professor Dr. Emil Fischer, speaking in German, offered the Hofmann medal of the Deutsche Chemische Gesellschaft to Sir William Perkin. Sir William has been an honorary member of the Society for twenty years, and Dr. Fischer, recalling this fact and his early achievements, referred with pleasure to the recent researches in pure chemistry with which Sir William's name is associated. In English, Dr. Fischer, approaching Sir William Perkin, said, "I am proud to bring you from Germany this token of our esteem and admiration, and hope the medal will give you the more pleasure because it bears upon it the features of your old friend and teacher, August Wilhelm von Hofmann."

Sir William Perkin, in the course of his reply, said that the first volume of the German Chemical Society was a small one, but it contained Graebe and Liebermann's important paper on the synthesis of alizarine from anthracene and Baeyer's paper on the reduction of indigo-blue. The first paper has resulted in the superseding of madder by artificial alizarine, and Baeyer's paper may be looked upon as the first step in the successful manufacture of artificial indigo. Sir William next referred to the many kindnesses he had received from German chemists, and thanked all connected with the jubilee celebration for gifts that had been made to him. The portrait he regarded as the crowning gift of all the recognitions he had received.—*Chem. and Drug.*, August 4, 1906.

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## NOTES AND NEWS.

DR. JOHN M. FRANCIS, chief chemist for Parke, Davis & Co., has written for the *Bulletin of Pharmacy* a detailed commentary on the Eighth Revision of the United States Pharmacopœia. This has been reprinted as a booklet of 112 pages and in its present form will be found extremely useful. A second edition, limited to 3,000, has just been struck off the press. Copies may be had on application to E. G. Swift, publisher of the *Bulletin of Pharmacy*, Detroit, Michigan.

THE MODERN MATERIA MEDICA, published by *The Druggists' Circular*, 100 William Street, New York City, is a booklet of over 300 pages, giving the source, chemical and physical properties, therapeutic action, dosage, antidotes, and incompatibilities of all additions to the newer materia medica. The book will be found useful to the retail pharmacist as well as the wholesaler as it con-

tains much of the information on newer medicaments, which is scattered through the medical journals, but which has not been incorporated in the text-books. The price of the book is $1.50.

THE ANNUAL LABORATORY REPORT of the Smith, Kline & French Company has been recently published. It contains reports of analyses, besides some original papers. Reports of this kind ought to be in the hands of retail pharmacists, as they show the necessity for testing goods purchased.

PROCTER MONUMENT FUND. The following additional subscriptions have been received:—

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| John Attfield (London) | $25 00 |
| Frank E. Morgan | 10 00 |
| F. Gutekunst | 5 00 |
| H. E. Peters | 5 00 |
| Samuel P. Sadtler | 10 00 |
| W. J. Stoner | 1 00 |
| Fred. E. Niece | 5 00 |

PROGRESS IN ALKALOIDAL CHEMISTRY, during the year 1904, by Dr. H. M. Gordin, is the title of Monograph No. 10 of the Pharmaceutical Popular Science Series, edited by Dr. Edward Kremers. The articles forming the basis of this monograph have appeared in the *Pharmaceutical Review*. It is fortunate for the student of pharmacy that these articles have been brought together in this form, as the literature is a rather large and wide one, and the abstracts are unusually full and present a great deal of useful information.

DR. HENRY H. RUSBY is the author of a series of well illustrated and interesting articles on the "Wild Foods of the United States," appearing in *Country Life in America*. In the September issue there are a number of other interesting articles on trees, fruits, birds, stock, poultry, etc.

HERMAN T. FRITZSCHE, senior member of the firm of Schimmel & Co., Leipzig, died on July 24th, of appendicitis, at Marienbad, Bohemia, where he had gone on account of ill-health.

LLOYD LIBRARY.—It has just been made public that in the will of the late Surgeon-General James Pattison Walker, of England, a clause gives to the Lloyd Library a fund of $30,000, and, what is far more valuable than the cash bequest, the entire library owned by the distinguished surgeon and student-scientist. Gen. Walker's collection of books and manuscripts is known to scientific men as one of the most valuable private collections.